Geophysicists surmise the inner core could have formed less than a billion years ago, which is relatively young on a geologic time scale. The study authors explain the inner core grows outward by solidifying materials from the liquid outer core, releasing heat and creating convection currents.

Scientists have discovered a new core at the center of the Earth

A recent study reveals a new, distinct fifth layer of Earth deep inside the core, which could help inform the evolution of Earth’s magnetic field

The Earth's outer core is in a state of turbulent convection as the result of radioactive heating and chemical differentiation. This sets up a process that is a bit like a naturally occurring electrical generator, where the convective kinetic energy is converted to electrical and magnetic energy.